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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,445

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Hirofumi Sakurai

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DORSEY & WHITNEY LLP  
INTELLECTUAL PROPERTY DEPARTMENT  
250 PARK AVENUE  
NEW YORK, NY 10177

EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,445	<b>Applicant(s)</b> SAKURAI, HIROFUMI	
	<b>Examiner</b> Nathan Danielsen	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/12/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-10 are pending. Claims 5-7 have been withdrawn in response to the provisional election of claims 1-4 and 8-10 on 18 September 2006.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Election/Restrictions***

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4 and 8-10, drawn to an optical pickup head and an optical pickup device, classified in class 720, subclass 601.
- II. Claims 5-7, drawn to a method of manufacturing an optical pickup head, classified in class 29, subclass 603.

The inventions are distinct, each from the other because of the following reasons:

4. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the method of manufacturing can be used to make a pickup head not requiring the two boards to be at different angles from each other.

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Jeffrey Karceski on 18 September 2006, a provisional election was made with traverse to prosecute the invention of group I, claims 1-4 and 8-10. Affirmation of

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this election must be made by applicant in replying to this Office action. Claims 5-7 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Specification***

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Objections***

8. Claims 4 and 10 are objected to because the word "makes" in the last limitation is confusing. The examiner suggests changing "makes" to --is-- to clarify this limitation. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Katou et al (JP Patent Application Publication 09-320092; hereinafter Katou).

Regarding claim 1, Katou, with respect to drawings 1-5, discloses an optical pickup head comprising:

a base section (optical base 22);

a first board which is provided on the base section and has a first wiring pattern (flexible printed circuit board (FPCB) 31);

a second board which is provided on the base section at an angle different from that of the first board and has a second wiring pattern electrically connected to the first wiring pattern (FPCB 32); and

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a flexible section which is formed on at least one of the first and second boards and to which a part of the wiring pattern is extended, the wiring pattern of the first board and the wiring pattern of the second board being soldered to each other via the wiring pattern extended to the flexible section (inherent in FPCBs, such as FPCBs 31 and 32).

Regarding claim 4, Katou discloses where the board on which the flexible section is formed includes:

a hard plate member (optical base 22 in figure 5); and  
a flexible wiring section which is bendable and is laminated to the hard plate member with a strip-like part of the flexible wiring section left as it is and on which a wiring pattern of the board is printed, wherein the flexible section makes the strip-like part of the flexible wiring section (portion of FPCB 31 extending beyond the edge of optical base 22).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 3, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katou, in view of Korkowski et al (US Patent Application Publication 2001/0011604; hereinafter Korkowski).

Regarding claim 2, Katou discloses everything claimed, as applied to claim 1. However, Katou fails to disclose where convex and concave shapes are formed on the two boards.

In the same field of endeavor, Korkowski discloses where the optical pickup head further comprises:

a convex part which is formed on the first board (interconnect slot 112 in figure 7); and  
a concave part which is formed on the second board and is mated with the convex part to align the first board and the second board with each other (alignment finger 132).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the FPCBs of Katou with the structure of Korkowski, for the purpose of properly connecting two circuit boards (§ 25).

Regarding claim 8, Katou discloses an optical pickup device comprising:

a head section for projecting laser light onto a disk medium via an optical lens (optical pickup 21);

and

a holding section for holding the disk medium so that the disk medium may face the head section (inherent in optical disk devices for the purpose of recording/reproducing on/from a disk medium), the head section includes:

a base section (optical base 22);

a first board which is provided on the base section and has a first wiring pattern (flexible printed circuit board (FPCB) 31);

a second board which is provided on the base section at an angle different from that of the first board and has a second wiring pattern electrically connected to the first wiring pattern (FPCB 32); and

a flexible section which is formed on at least one of the first and second boards and to which a part of the wiring pattern is extended, the wiring pattern of the first board and the wiring pattern of the second board being soldered to each other via the wiring pattern extended to the flexible section (inherent in FPCBs, such as FPCBs 31 and 32).

However, Katou fails to disclose where convex and concave shapes are formed on the two boards.

In the same field of endeavor, Korkowski discloses where the optical pickup head further comprises:

a convex part which is formed on the first board (interconnect slot 112 in figure 7); and

a concave part which is formed on the second board and is mated with the convex part to align the first board and the second board with each other (alignment finger 132).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the FPCBs of Katou with the structure of Korkowski, for the purpose of properly connecting two circuit boards (§ 25).

Regarding claims 3 and 9, Katou discloses everything claimed, as applied to claim 2. However, Katou fails to disclose where at least one of the boards is held in place with a screw.

In the same field of endeavor, Korkowski discloses where at least one of the first and second boards is fixed to the base section at one point with a fixing screw (figure 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have held the circuit boards of Katou in place with screws, as taught by Korkowski, for the purpose of fixedly attaching the circuit boards to a particular location (col. 3, lines 8-11 of Tsuyuguchi et al (US Patent 5,010,246; hereinafter Tsuyuguchi)).

Regarding claim 10, Katou discloses everything claimed, as applied to claim 8. Additionally, Katou discloses where the board on which the flexible section is formed includes:

a hard plate member (optical base 22 in figure 5); and

a flexible wiring section which is bendable and is laminated to the hard plate member with a strip-like part of the flexible wiring section left as it is and on which a wiring pattern of the board is printed, wherein the flexible section makes the strip-like part of the flexible wiring section (portion of FPCB 31 extending beyond the edge of optical base 22).

#### ***Citation of Relevant Art***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - a. Woychik (US Patent 5,484,965) discloses convex and concave portions used to fix two circuit boards in proper alignment.

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***Closing Remarks/Comments***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 8:30 AM - 4:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Danielsen  
10/20/2006

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